Chapter H2: Technical and Economic Descriptions of the J.R. Whiting Facility

H2-1 Baseline Operational Characteristics

Chapter Contents

The J.R. Whiting power plant operates four units. Three are coal-fired steam electric units that use cooling water withdrawn from Lake Erie (Units 1-3) while the fourth unit (Unit 4) is an oil-fired gas turbine that does not require cooling water. The units began operation between July 1952 and May 1968.

J.R. Whiting's total net generation in 1999 was 2.1 million MWh. The three steam turbine units (Units 1-3) had capacity utilization rates between 71.4 and 77.3 percent. Table H2-1 presents details for J.R. Whiting's four units.

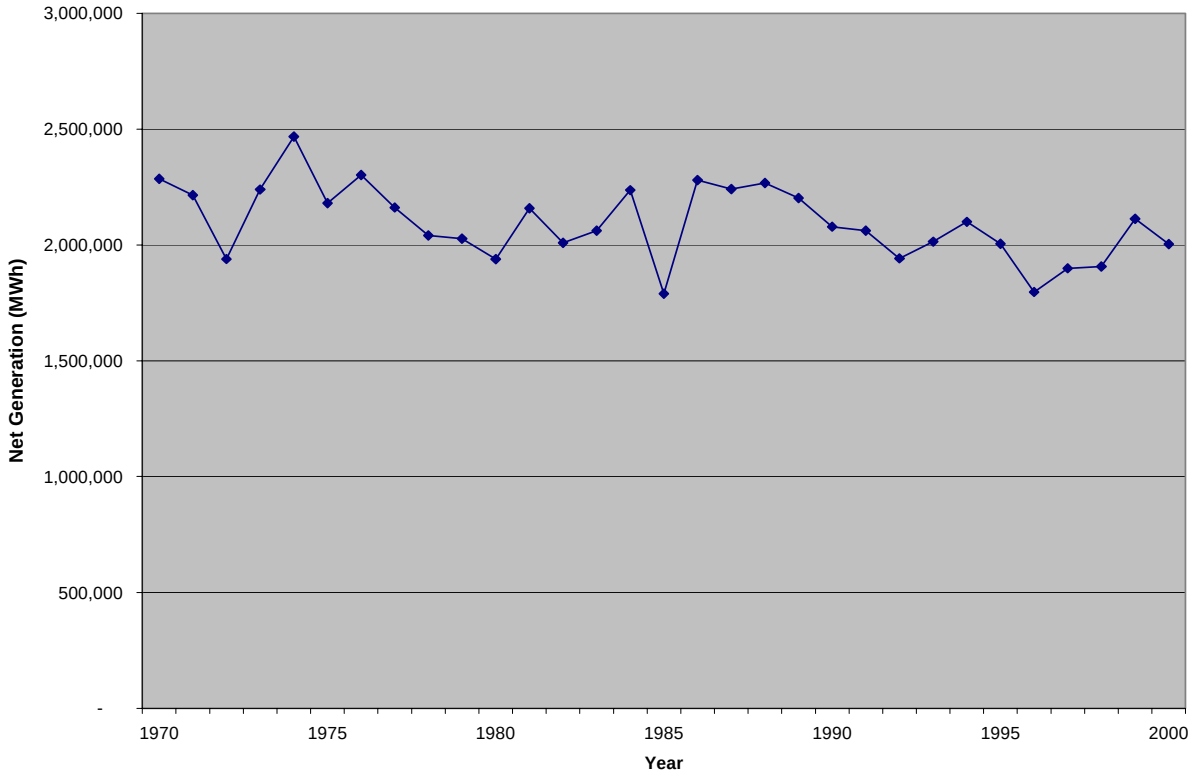
Table H2-1: Generator Detail of the J.R. Whiting Plant (1999)

Generator ID	Capacity (MW)	Prime Mover[a]	Energy Source[b]	In-Service Date	Operating Status	Net Generation (MWh)	Capacity Utilization[c]	ID of Associated CWIS
1	100	ST	BIT	Jul. 1952	Operating	625,383	71.4%	1
2	100	ST	BIT	Dec. 1952	Operating	677,547	77.3%	2
3	125	ST	BIT	Nov. 1953	Operating	807,688	73.8%	3
A	21	GT	FO2	May 1968	Operating	1,826	1.0%	Not applicable
Total	**346**					**2,112,444**	**69.8%**	

[a] Prime mover categories: ST = steam turbine; GT = gas turbine.
[b] Energy source categories: BIT = bituminous coal; FO2 = No. 2 fuel oil.
[c] Capacity utilization was calculated by dividing the unit's actual net generation by the potential generation if the unit ran at full capacity all the time (i.e., capacity * 24 hours * 365 days).
Source: U.S. Department of Energy, 2001a, 2001b, 2001d.

Figure H2-1 below presents J.R. Whiting's electricity generation history between 1970 and 2000.

Figure H2-1: J.R. Whiting Net Electricity Generation 1970 -2000 (in MWh)



Source: Form EIA-906.

H2-2 CWIS Configuration and Water Withdrawal

The J.R. Whiting facility has one cooling water intake structure serving the entire facility. The facility withdraws cooling water from North Maumee Bay (located in western Lake Erie) via a recessed shoreline intake at the lake surface. The intake has a fish barrier net located across the recessed portion of the shoreline and a dual entry/single exit traveling screen, as well as trash racks located at the entrance to intake structure. In 1996, the facility withdrew an average of 298 MGD at an average intake velocity of 1.03 feet per second. The total design intake flow for J.R. Whiting is 308 MGD.